

## **ABSTRACT**

An improved structure of coil inductor wave filter magnet core comprised of double standoffs having a separator disposed at the center rod area that is smaller in diameter than the double standoffs and a minimum of one aligned locating notch  
5 at the bottom section of the double standoffs. As such, the spaces between the double standoffs and the separator respectively provide for winding copper wire to construct an inductive wave filter with a lower overall wave filter coil stray capacitance to achieve higher wave efficiency. The aligned locating notches disposed at the bottom section of the double standoffs are respectively shunted to  
10 the two terminals of a reel switch, and the magnetic induction of the wave filter is such that current flowing from the wave filter controls the opening and closing of the reel switch. When utilized with a splitter, the ADSL and telephone signal used at the same time are individually differentiated via the reel switch and transferred along its path such that the signal is not subjected to interference, ensuring optimal  
15 telephone communications quality.